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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ernest L. Lawton

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EXAMINER

GRAY, JILL M

ART UNIT

PAPER NUMBER

1798

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/775,174	LAWTON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jill Gray	1798	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-10,14-20,22,23,27-36,38-40,42-48,50,51 and 76-109 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-4,6-10,14-20,22-23,27-36,38-40,42-48,50-51,76-109 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Pursuant to the entry of the amendment of October 28, 2010, the status of the claims is as follows: Claims 1, 3-4, 6-10, 14-15, 19-20, 22-23, 27-36, 38-40, 42-48, 50-52, and 76-109 are pending. Claims 1 and 8-10 are amended. Claims 2, 5, 11-13, 16-18, 21, 24-26, 37, 41, 49, and 53-75 are cancelled. Claims 76-109 are new.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3-4, 6-7, 14-15, 19-20, 22-23, 27-36, 38-40, 42-48, and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartrug 3,583,882 in view of Girgis 4,440,881.

### **The Prior art**

Bartrug discloses a glass fiber product comprising at least one glass fiber and an elastomeric latex material adhered to the at least one glass fiber. In addition, Bartrug discloses that the at least one glass fiber is coated with a sizing material prior to coating with the elastomeric latex material. See entire document and for example abstract, and column 3, lines 46-65. The sized glass fibers are coated with an aqueous elastomeric latex composition and dried to remove substantially all of the liquid component while leaving the solid component unaffected. The resultant strands are free of tack. See column 4, lines 39-60. Claim 1 requires particles adhered to the at least one strand. Bartrug discloses a rubber adhesive composition comprising a terpolymer latex dispersed in water, wherein the terpolymer is butadiene-styrene vinyl pyridine said

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composition coated on the glass fiber strands. See Example. The formation of a latex dispersed in water necessarily embraces particles. Note also that Bartrug teaches a coating process that minimizes splatter of particles of the composition solids. (Column 4, lines 61-70). The particles of claim 1 can be polyolefins which would encompass the elastomeric latex of Bartrug. The dried strands of Bartrug are incorporated into a rubber matrix material. More specifically, at least one glass fiber of Bartrug is at least partially coated with a coating, wherein the coating is a residue of a coating composition, wherein the coating composition is selected from a resin-compatible coating composition. It should be noted that the sized glass fibers of Bartrug meet this limitation as well.

Bartrug does not teach the average dimension of the particles in his latex.

Girgis teaches an aqueous adhesive coating composition for filamentary materials such as glass fibers and the aqueous adhesive coating composition comprises an elastomer that can be a vinyl pyridine butadiene-styrene terpolymer latex. See entire document, for example abstract, column 10, lines 15-17 and Example 1. In addition, Girgis teaches that the particle size of the elastomeric latex must be less than 2000 angstroms ( $0.20\mu\text{m}$ ; 200nm), further teaching that a suitable butadiene-vinyl pyridine-styrene terpolymer is commercially available and has a particle size of 1100 angstroms ( $0.11\mu\text{m}$ ; 110nm), as well as particle sizes of 50 nm and 70 nm. See column 10, lines 18-29.

**Regarding Independent claim 1**

Bartrug, as set forth above does not teach the dimension of the particles in his latex.

It is the examiner's position that a limitation with respect to the size of an article, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. *In re Rose*, 105 USPQ 237 (CCPA 1955). In the present case, there is no clear factual evidence on this record, by way of back-to-back comparison that the prior art device, with a particle size of 50 nm would function differently than that of the claimed invention, i.e. effectively reduce tackiness of the glass fiber product. Absent such evidence, the relative particle size is not construed to be a matter of invention. Moreover, it should also be noted that Girgis also teaches that his particles are present in the same amount contemplated by applicants, per claim 20. Presumably this amount would be an amount effective to reduce the tackiness of the glass fiber product. Furthermore, Bartrug and Girgis each teach a glass fiber product comprising at least one glass fiber and particles adhered to the glass fiber, wherein the particles can be butadiene-vinyl pyridine-styrene terpolymer latex, and the glass fiber product can be incorporated into a rubber matrix material. Thus, Bartrug and Girgis are analogous art. "Section 103 requires us to presume full knowledge by the inventor of the prior art in the field of his endeavor" *In re Winslow*, 53 CCPA 1574, 1578, 365 F.2d 1017, 1020, 151 USPQ 48, 50-51, (1966).

It would have been obvious to one of ordinary skill in this art at the time the invention was made to use as the butadiene-vinyl pyridine-styrene terpolymer of Bartrug, a commercially available terpolymer such as that taught by Girgis having a low average particle size, with the reasonable expectation of success of forming glass strands having improved flexibility and improved fatigue resistance.

**Regarding dependent claims 3-4, 6-7, 14-15, 19-20, 22-23, 27-36, 38-40, 42-48, and 50-52**

Regarding claims 3-4, Bartrug and Girgis each teach glass fiber strands, wherein Girgis additionally teaches the formation of woven articles. The impregnated glass strands of the prior art constitute a glass fiber prepreg.

Regarding claims 6-7, these claims are drawn to the size of the particles. As set forth above, it is the examiner's position that a limitation with respect to the size of an article, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. *In re Rose*, 105 USPQ 237 (CCPA 1955). Girgis teaches that the particle size of the elastomeric latex must be less than 2000 angstroms (200nm), further teaching that a suitable butadiene-vinyl pyridine-styrene terpolymer is commercially available and has a particle size of 1100 angstroms (110nm), as well as teaching in the examples, particles sizes of 50 nm or 70 nm. See column 10, lines 18-29 and Examples. In the present case, there is no clear factual

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evidence on this record, by way of back-to-back comparison that the prior art device, with a particle size of 50 nm would function differently than that of the claimed invention.

Regarding claims 14-15, and 32, Girgis teaches that two or more elastomeric latexes can be blended wherein each of the latexes can have different particle sizes, wherein the particle sizes are within the instant claimed ranges for the first average particle dimension and the second particle dimension. See column 7, lines 29-58 and column 8, lines 35-66. Moreover, it is the examiner's position that "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 105 USPQ 233 (CCPA1955).

Regarding claim 19, this limitation is drawn to the shape of the particles, which is not construed to be a matter of invention in the absence of factual evidence of unexpected or superior properties of the resultant glass product, wherein said properties are directly related to the specific particle shape.

Regarding claims 20 and 22-23, 47-48, and 50, Girgis teaches that the amounts of various components in his coating composition can be varied to some degree and can be varied in relationship to each other, further teachings that the vinyl-pyridine latex can vary within a range from about 5 to about 55 weight percent on a dried basis of the aqueous coating composition. See column 9, line 59 through column 10 and line 3. In addition, Girgis teaches that the suitable commercially available vinyl-pyridine elastomeric latexes have 40-42% solids which would result in a coating composition comprising an amount of dispersed particles within the instant claimed ranges of

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present claims 47-48 and 50. Furthermore, it is the examiner's position that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA 1955).

Regarding claims 27-28 and 30, as set forth previously, the latex particles of Bartrug and Girgis are polyolefin, organic and solid.

Regarding claim 29, Girgis teaches that his elastomeric matrix material can contain monoolefinic hydrocarbons such as ethylene. See column 4, lines 41-44. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the coating composition to include (comprise) polyethylene particles, commensurate with the specific composition of the elastomeric matrix material to enhance adhesion of the coated glass strand and the matrix material.

Regarding claim 31, Bartrug teaches a composition comprising inorganic particles such as silica and calcium carbonate. See Example.

Regarding claims 33-36, 38-40, 42-46 the combined teachings of Bartrug and Girgis teach particle sizes and an amount of particles that are within the claimed critical ranges. Therefore, the examiner has reason to believe that properties such as the tractive tension of the glass fiber product, frictional tension, separation of filaments or reduction in the degree of interfilament bonding are within the parameters contemplated by applicants, in the absence of factual evidence to the contrary. Applicants are invited to provide such evidence.



Regarding claim 51, Bartrug and Girgis each teach the application of a sizing composition onto the glass fibers or the usage of sized glass fibers, i.e. glass fibers having a coating of a dried residue of a resin-compatible coating. Applicants' should note that present claim 1 does not require that the particles be present in the coating composition comprising a dried residue of a resin-compatible coating. Moreover, present claim 1 does not require that the particles be present in a coating composition.

Regarding claim 52, the specific type of glass fibers is not construed to be a matter of invention in the absence of factual evidence of unexpected or superior properties in the resultant glass fiber product, wherein said properties are directly related to the specific type of glass fiber used. Applicants are invited to provide such evidence. In addition, Girgis teaches that glass fibers of the type contemplated by applicants can be used. See column 4, lines 4-13.

Therefore, the combined teaching of Bartrug and Girgis would have rendered obvious the invention as claimed in present claims 1, 3-4, 6-7, 14-15, 19-20, 22-23, 27-36, 38-40, 42-48, and 50-52.

4. Claims 8-10 and 76-109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Publication JP 09-012342 A (abstract and machine translation), herein after "the publication".

**Regarding Independent claim 76**

The publication discloses a glass fiber product comprising at least one glass fiber coated with a sizing agent comprising a polyvinyl acetate emulsion, silane coupling agent and a lubricant. See [0002]. The polyvinyl acetate emulsion contains particles

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having a particle diameter of  $<1\mu\text{m}$  and  $2.5\text{-}100\mu\text{m}$ . See abstract and [0010]. Since the publication discloses particle sizes within the present claimed range, the examiner has reason to believe that said particles are effective to reduce the tackiness of the glass fiber product.

**Regarding dependent claims 8-10 and 77-109**

As to claims 77-78, the glass fiber can be a glass strand and the formation of a prepreg. See [0018] and [0020].

As to claims 8-10, 79-82, and 91, these claims are drawn to the size of the particles. As set forth above, it is the examiner's position that a limitation with respect to the size of an article, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. *In re Rose*, 105 USPQ 237 (CCPA 1955). In addition, the publication discloses that the composition contains particles having diameters of  $<1\mu\text{m}$  and  $2.5\text{-}100\mu\text{m}$ .

As to claims 83, this limitation is drawn to the shape of the particles, which is not construed to be a matter of invention in the absence of factual evidence of unexpected or superior properties of the resultant glass product, wherein said properties are directly related to the specific particle shape.

As to claims 84-85, the publication teaches a volume percent of particles that is higher than that contemplated by applicants, however, it is the examiner's position that where the general conditions of a claim are disclosed in the prior art, it is not inventive

to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA 1955). The skilled artisan during routine experimentation would determine the specific amount of each component commensurate with the desired properties of the end products.

As to claims 86-89, the publication discloses particles of the type contemplated by applicants. As to claim 88, it would have been obvious to modify the composition of the publication by including polyethylene particles so as to modify and the LOI of the resultant composite.

As to claims 92-104, the publication discloses particles of the same diameter as contemplated by applicants. Therefore, the examiner has reason to believe that properties such as the tractive tension of the glass fiber product, frictional tension, separation of filaments or reduction in the degree of interfilament bonding are within the parameters contemplated by applicants, in the absence of factual evidence to the contrary. Applicants are invited to provide such evidence.

As to claims 105-107, the publication teaches that the particles can be present in amounts of up to 90% by volume. See [0010]. This teaching renders obvious the required "at least 1%" and "at least 2%".

As to claim 108, the publication teaches that his composition is a primary sizing agent. See [0012].

Therefore the teachings of the publication would have rendered obvious the invention as claimed in present claims 8-10 and 76-89, 91-108.

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5. Claims 90 and 109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Publication JP 09-012342 A (abstract and machine translation), herein after "the publication" in view of Bartrug 3,583,882 and Girgis 4,440,881, each as applied above.

The publication is as set forth above but does not teach the inclusion of an inorganic particles or the type of glass fibers.

As to claim 90, Bartrug teaches a composition comprising inorganic particles such as silica and calcium carbonate. See Example. It would have been obvious to one having ordinary skill in the art to modify the composition of the publication by including inorganic particles for stabilizing the polymer matrix.

As to claim 109, the specific type of glass fibers is not construed to be a matter of invention in the absence of factual evidence of unexpected or superior properties in the resultant glass fiber product, wherein said properties are directly related to the specific type of glass fiber used. Applicants are invited to provide such evidence. In addition, Girgis teaches that glass fibers of the type contemplated by applicants can be used. See column 4, lines 4-13. It would have been obvious to one having ordinary skill in the art to use as the glass fibers, those known in the art and as taught by Girgis with a reasonable expectation of success.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

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7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Gray/  
Primary Examiner  
Art Unit 1798

jmg